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To: . Mr. J. E. Wickham✓

Date: October 24, 1988

From: . J. Y. Lewis

Subject: . Premier Cigarettes - R. J. Reynolds

Premier 80 (Box) and Premier Menthol 80 (Box) from R. J. Reynolds were analyzed in our laboratories. FTC procedures were followed as closely as possible in obtaining smoke data. Some deviations from FTC procedures, however, were required and were as follows: cigarettes were analyzed directly from the pack with no equilibration period. Cigarettes were placed in the 20-port smoking machine and preheated statically for 30 seconds with a Scripto Lighter. Cigarettes were then lit during the first puff with the Scripto Lighter. This procedure was sufficient to ensure that cigarettes remained lit between puffs. Because these cigarettes do not burn down as does a conventional cigarette, no butt mark was required. The cigarettes were smoked until the carbon heat source was no longer burning and the puff count was determined at that point. All other procedures were as specified by FTC methodology (i.e. puff volume and duration).

A diagram depicting the various components of the Premier cigarette is shown in Figure 1. Photographs of the packaging, cigarette, and component parts are depicted in Figures 2-4. Observations regarding the different components are as follows: the filter material was determined to be polypropylene with no plasticizers added. Ventilation was accomplished by Hauni laser perforation. The tobacco paper filter within the rod consisted of softwood and small tobacco particles, and was brown in color for the regular brand. In the menthol brand, the tobacco paper filter contained very fine carbon particles as well, and was black in color. The filler material for both regular and mentholated brands was 100% expanded tobacco. The aluminum capsule was filled with small spherical particles as shown in Figure 4. The carbon heat source was attached to the end of the aluminum capsule and was surrounded by a sheet of glass fibers. The carbon and a few millimeters of paper around the carbon are the only things that burn in this cigarette.

Analytical results for Premier 80 (Box) and Premier Menthol 80 (Box) are shown in Table I. The tobacco in these cigarettes is heated rather than burned. As a result the "tar" is different from that of a conventional cigarette in which the tobacco is burned. "Tar" for the Premier cigarette is referred to as nicotine-free dry particulate matter (NFDPM). NFDPM is obtained by subtraction of nicotine and water from TPM.

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Figure 1. Diagram of Premier Cigarette

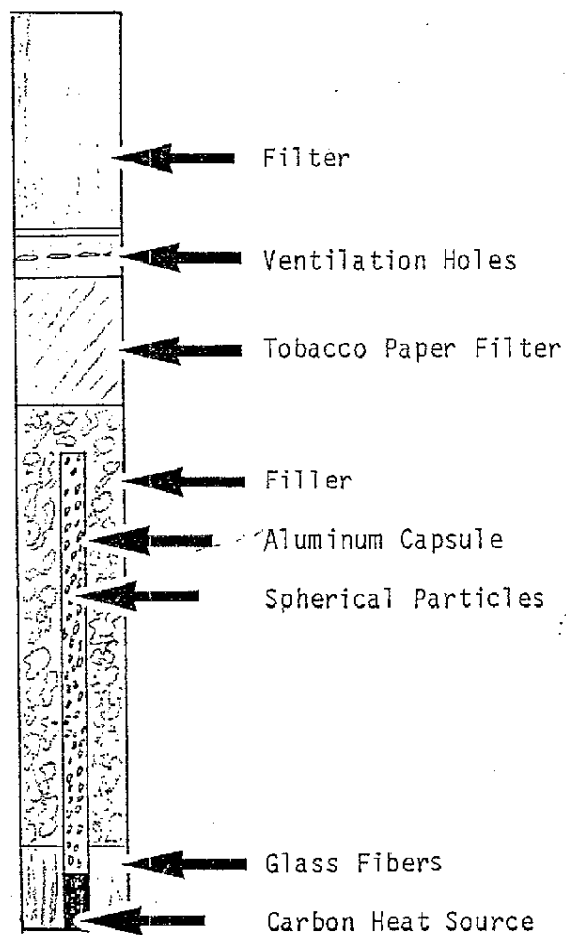


Figure 2.

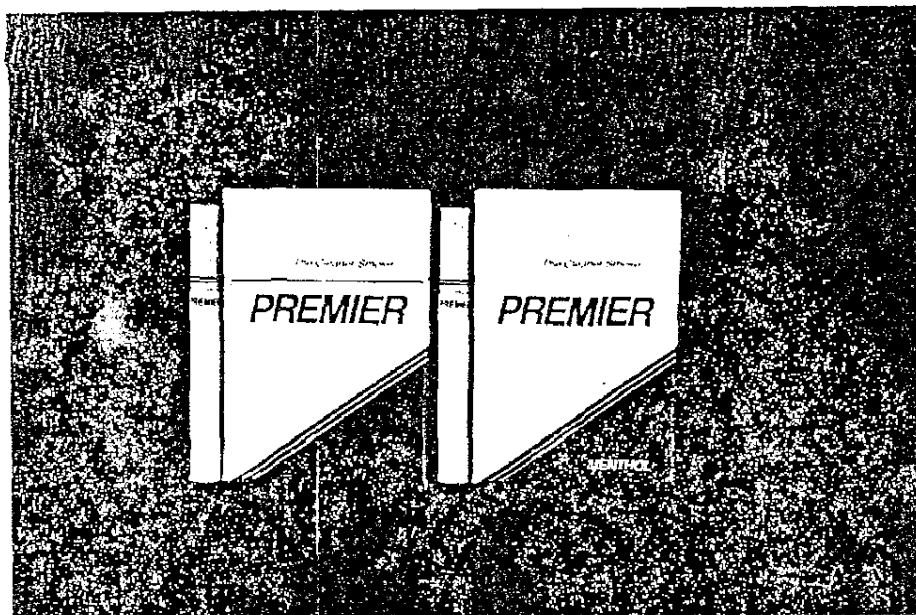


Figure 3.

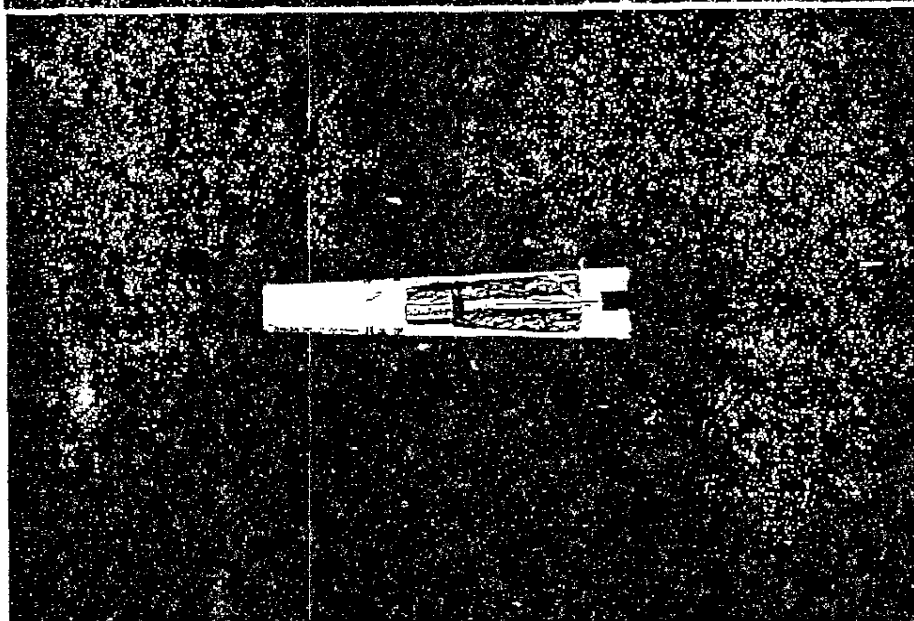


Figure 4.

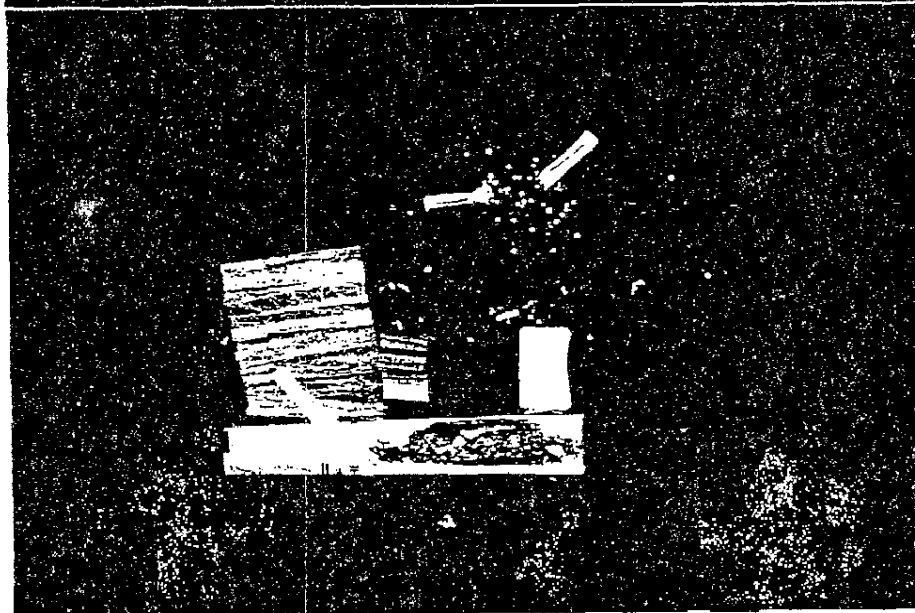


Table I. Analytical Data for Premier Cigarettes

	Premier 80 (Box)	Premier Menthol 80 (Box)
<u>Smoke</u>		
TPM, mg/cigt.	6.7	5.4
Nicotine, mg/cigt.	0.20	0.15
Water, mg/cigt.	3.53	2.77
*NFDPM, mg/cigt.	3.0	2.5
Puffs/Cigt.	10.3	10.1
Menthol, mg/cigt.	ND	0.10
CO, mg/cigt.	10.0	10.4
NO, mg/cigt.	0.018	0.013
HCN, mg/cigt.	0.002	0.004
RCHO, mg/cigt.	0.036	0.042
Propylene Glycol, mg/cigt.	<0.2	<0.2
Glycerine, mg/cigt.	2.9	2.9
Triethylene Glycol, mg/cigt.	ND	ND
<u>Cigarette</u>		
Total RTD, mm of H ₂ O	67	76
Length, mm	77.9	78.0
Circumference, mm	25.0	25.0
Diameter, mm	8.0	8.0
<u>Paper</u>		
Porosity, sec.	28	30
Porosity, ml/min·cm ²	27	26
<u>Filter</u>		
Tipping Paper Length, mm	25	25
RTD, mm of H ₂ O	18	23
Length, mm	30.0	30.0
Weight, g	0.200	0.219
Ventilation, %	18	20
Menthol, mg/cigt.	ND	<0.10
Triacetin, %	ND	ND
Triethylene Glycol, %	ND	ND
Triethylene Glycol Diacetate, %	ND	ND
<u>Filler</u>		
Total Alkaloids, %	2.25	2.28
Nicotine, %	1.96	2.04
Total Reducing Sugars, %	0.1	0.4
Wt. of Tob., g	0.151	0.154
Rod Density, g/cc	0.080	0.081
Menthol, %	ND	0.11
Propylene Glycol, %	0.2	0.2
Glycerine, %	2.5	2.6
Triethylene Glycol, %	ND	ND

*NFDPM implies Nicotine-Free Dry Particulate Matter

	Premier 80 (Box)	Premier Menthol 80 (Box)
<u>Tobacco Paper Filter</u>		
Nicotine, %	0.42	0.17
Menthol, %	ND	4.44
Glycerine, %	1.4	12.0
Propylene Glycol, %	<0.2	<0.2
Triethylene Glycol, %	ND	ND
Length, mm	10.0	9.9
Weight, g	0.099	0.099
<u>Spherical Particles</u>		
Nicotine, %	0.53	0.55
Menthol, %	ND	ND
Glycerine, %	17.7	18.6
Propylene Glycol, %	<0.2	<0.2
Triethylene Glycol, %	ND	ND
Weight, g/cigt.	0.331	0.335

ND implies none detected.

Further testing will be done on Premier to determine the effect of conditioning the cigarettes, the most efficient lighting method for the cigarettes, and the best manner to collect 100% of the TPM. Water in smoke values for this cigarette are reportedly higher than what we have found. A single TPM pad may become saturated at this level of water and not be able to trap it all.

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